



**mineral resources
& energy**

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Occupational Health and Safety Report Safety: FY 2023/24 Q1 (Apr-Jun 2023)

OCCUPATIONAL HEALTH



1. INTRODUCTION

In terms of section 11(5B) of the Mine Health and Safety Act (MHSA), Act No. 29 of 1996, as amended; the employer must notify the Principal Inspector of mines (PIoMs) of any occurrence at the mine that results in serious illness or death of any person. The employers submit to the PIoMs, the Health Incident Reports (HIRs) DMRE 231 Forms completed by the Occupational Medical Practitioners (OMPs) on monthly basis to report occupational diseases diagnosed amongst mine employees during medical surveillance.

The completed DMRE 231 Forms are submitted to Department of Mineral Resources and Energy by the mines at the respective regional offices for processing and further management.

2. OCCUPATIONAL DISEASES REPORTED

During April-June 2023 the mines reported a total of **357** occupational diseases from the Health Incident Reports (HIRs) submitted when compared to **298** reported during the same period in the year 2022.

Calculation of the percentage change:
 $(357-298)/298 \times 100 = 19.80\%$

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3. ANALYSIS OF OCCUPATIONAL DISEASES REPORTED PER REGION

TABLE 3.1 Analysis of occupational diseases reported per region: April-June 2023 and April-June 2022

	EC		FS		GP		KZN		LP		MPU		NC		NWK		NWR		WC		Total		Percentage change
	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	
PTB	0	2	29	10	25	34	3	0	10	5	11	10	2	7	13	43	63	35	1	0	157	146	-7.01%
Sil+TB	0	0	2	2	1	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	4	5	25.00%
MDR-TB	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5	1	0	0	5	3	-40.00%
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Silicosis	0	0	25	23	5	14	0	0	0	0	1	0	0	0	2	7	4	1	0	0	37	45	21.62%
Asbestosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
CWP	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	1	-66.67%
COAD	0	0	10	11	3	0	0	0	0	0	2	1	0	0	1	2	1	8	0	0	17	22	29.41%
Occupational asthma	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	2	0.00%
Occupational lung cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
NIHL	0	3	5	10	3	40	1	1	2	9	7	1	4	1	4	6	38	50	2	1	66	122	84.85%
Occupational skin diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	#DIV/0!
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Musculo-skeletal disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	-100.00%
Progressive massive fibrosis	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	#DIV/0!
Other occupational diseases	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	4	0	0	3	6	100.00%	
Total	0	5	75	57	39	96	4	1	12	14	22	14	7	8	21	61	115	100	3	1	298	357	19.80%



4. ANALYSIS OF OCCUPATIONAL DISEASES REPORTED BY COMMODITY

4.1 The table below shows a comparison of occupational diseases reported by sector during April-June 2023 when compared to the same period in 2022. An increase has been noted on the overall total number of occupational diseases reported by the mines. Table 4.1 below shows a significant increase on the cases reported from the **gold** sector.

4.1 The analysis of the silicosis cases in gold mines as shown on Figure 6.1 and the noise induced hearing loss (NIHL) cases by commodity (*chrome, coal, gold and platinum*) as depicted on Table 7.1 to Table 7.4 is evident of the lag time between workplace exposures (e.g., respirable silica bearing dust and noise) and the onset of occupational diseases.

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TABLE 4.1 Analysis of occupational diseases reported by commodity: April-June 2023 and April-June 2022

	Gold		Platinum		Coal		Diamonds		Copper		Chrome		Manganese		Iron ore		Other mines		Total	
	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024	Q1 2022/2023	Q1 2023/2024
PTB	70	87	64	39	12	9	1	3	1	0	6	2	0	2	2	2	1	2	157	146
Sil+TB	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5
MDR-TB	0	2	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silicosis	32	44	4	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	37	45
Asbestosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWP	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
COAD	14	13	1	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	17	22
Occupational asthma	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2
Occupational lung cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIHL	17	56	40	57	2	2	0	1	0	0	1	2	1	0	0	0	5	4	66	122
Occupational skin diseases	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Musculo-skeletal disorders	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Progressive massive fibrosis	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Other occupational diseases	3	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
Total	140	214	118	111	20	14	1	4	1	0	7	4	1	2	3	2	7	6	298	357
Percentage change	52.86%		-5.93%		-30.00%		300.00%		-100.00%		-42.86%		100.00%		-33.33%		-14.29%		19.80%	

5. ANALYSIS OF OCCUPATIONAL DISEASES BY DISEASE CLASSIFICATION GROUPS

5.1 OCCUPATIONAL LUNG DISEASES (OLD)

The mines reported a total of **228** occupational lung diseases (OLD) cases during April-June 2023, when compared to **225** cases during the same period in 2022. The cases of OLD reported include the following: Pulmonary tuberculosis (**PTB**), Silico-tuberculosis (**Sil+TB**), Multidrug-resistant TB (**MDR TB**); Silicosis, Coal workers' pneumoconiosis (**CWP**) Chronic obstructive airways disease (**COAD**), Occupational asthma and progressive massive fibrosis (**PMF**).

5.1.1 PNEUMOCONIOSIS

Primary Pneumoconiosis include the Silicosis, caused by inhalation of silica dust, asbestosis caused by inhalation of asbestos fibres and coal workers' pneumoconiosis caused by inhalation of coal dust.

5.1.1.1 SILICOSIS

The mines reported a total of **45** silicosis cases during April-June 2023 compared to **37** cases reported during the same period in 2022. Majority silicosis cases were reported from gold sector with **44** cases whilst platinum sector reported only one case.

5.1.1.2 COAL WORKERS' PNEUMOCONIOSIS (CWP)

One case of coal workers' pneumoconiosis was reported in April-June 2023 when compared to **three** cases reported in the same reporting period during 2022.

5.1.1.3 ASBESTOSIS

No cases of Asbestosis were reported for both reporting periods.

5.1.2 PULMONARY TUBERCULOSIS (PTB)

A total of **146** Pulmonary tuberculosis (**PTB**) cases were reported during April-June 2023, the mines compared to **157** cases reported in the same period of 2022. The gold sector reported **87** PTB cases which is highest number; followed by platinum **39** with cases, coal with nine (**9**) cases, diamond with **three (3)** and **one (1)** case for chrome, manganese, Iron ore and other mines respectively. Three (**3**) cases of multidrug-resistant TB (**MDR-TB**) were reported during April-June 2023 whilst five cases were reported during the same period in the previous year. No cases of extensively drug-resistant TB (**XDR TB**) were reported for both periods.

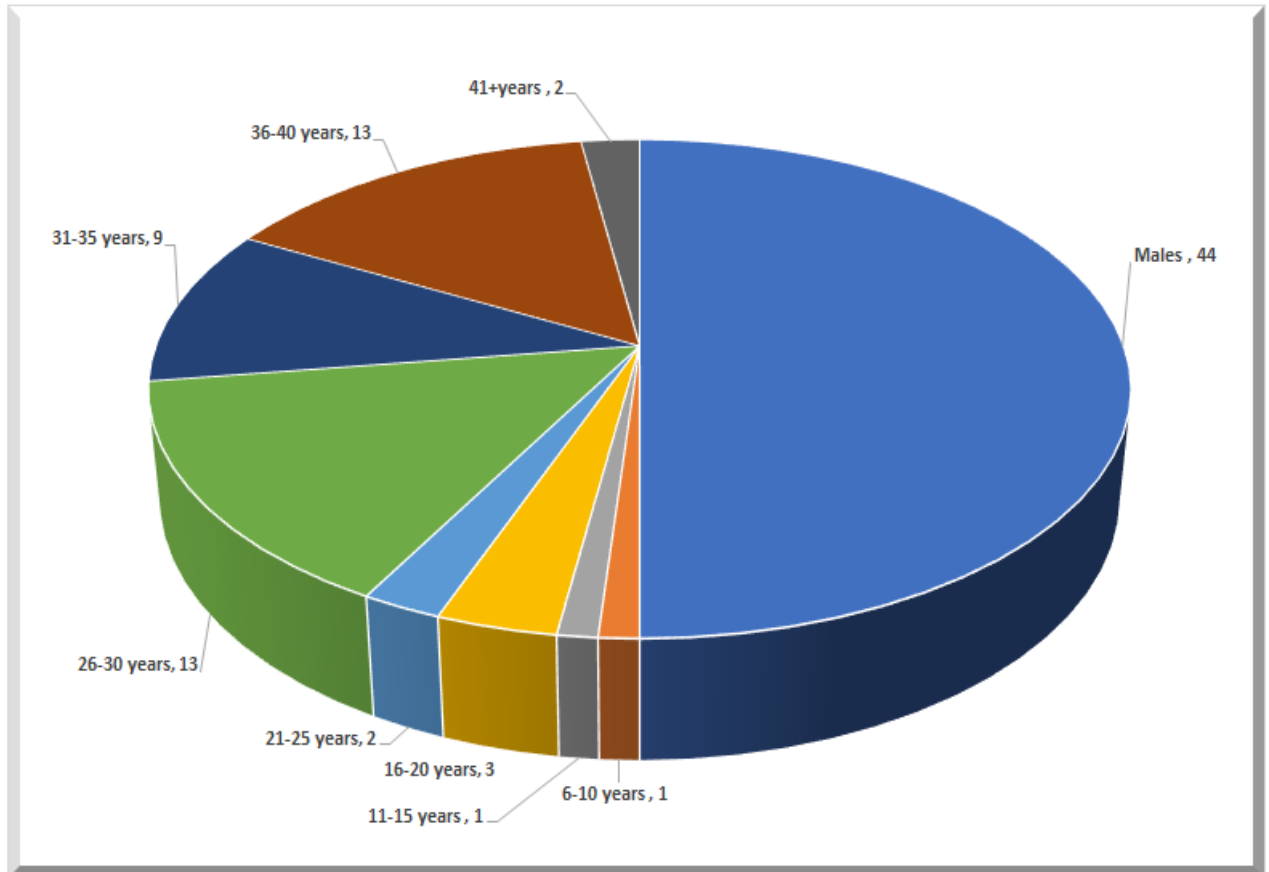
5.2 NOISE-INDUCED HEARING LOSS (NIHL)

A significant increase is noted in the noise-induced hearing loss (**NIHL**) cases reported with a total of **122** reported during April-June 2023 compared to **66** cases reported during the same period in 2022. Majority of the cases were reported from platinum sector with a total of **57** followed by gold with **56** cases and two (**2**) cases from coal sector. Diamond mines reported **one** case, chrome **two** cases and other mines **four** cases.



6. ANALYSIS OF SILICOSIS CASES REPORTED FROM GOLD MINES BY YEARS OF SERVICE

FIGURE 6.1 Analysis of silicosis cases reported from **gold** mines by years of service: April-June 2023



During **April-June 2023** the gold sector reported **44** silicosis cases as illustrated on **Figure 6.1** above. **One** case of accelerated silicosis was reported with **≤10 years** of service. The other cases of silicosis cases were reported as follows;

- **One** silicosis case was reported with **≤11-15 years**,
- **Three** cases with **16-20 years**,
- **Two** cases with **21-25 years**,
- **13** cases with **26-20 years** and
- **Nine (9)** cases with **31-35 years**
- **thirteen** cases with **36-40 years** and
- **two** cases with **≥41** years of service in the mining industry.

No female employees were reported with silicosis for both reporting periods.



7. ANALYSIS OF NOISE INDUCED HEARING LOSS CASES REPORTED BY COMMODITY, PERCENTAGE LOSS OF HEARING (PLH) AND YEARS OF SERVICE: APRIL 2022-JUNE 2022

Table 7.1 Analysis of noise-induced hearing loss (NIHL) from gold mines: April-June 2023

	Years of service	PLH									Total
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	
Gold	1 - 5	1	0	0	0	0	0	0	0	0	1
	6 - 10	1	1	1	0	0	0	0	0	0	3
	11-15	0	3	0	0	0	0	0	0	0	3
	16 - 20	1	0	0	0	0	0	0	0	0	1
	21-25	5	1	1	0	0	0	0	0	0	7
	26-30	5	3	0	0	0	0	0	0	0	8
	31-35	7	2	0	1	0	1	0	0	0	11
	36-40	9	7	0	0	0	0	0	0	0	16
	41+	3	0	1	0	1	0	0	1	0	6
	Total	32	17	3	1	1	1	0	1	0	56

The gold sector reported a total of **56** noise induced hearing loss (NIHL) cases during **April-June 2023** as shown on **table 7.1** above. The analysis is as follows:

- **One case with percentage loss of hearing (PLH) of 10-15% was reported with ≤1-5 years of service and one cases with PLH of 10-15% with ≤1-10 years of service in the mining industry.**
- **One case was reported with ≤1-10 years of service with PLH of 16-20% and 21-25% respectively.**



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Table 7.2 Analysis of noise-induced hearing loss (NIHL) from platinum mines: April-June 2023

Platinum	Years of service	PLH									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
	1 - 5	1	0	0	0	0	0	0	0	0	1
	6 - 10	1	0	0	0	0	0	0	0	0	1
	11-15	5	1	0	0	0	0	0	0	0	6
	16 - 20	7	2	0	0	1	1	0	0	0	11
	21-25	5	0	1	0	0	0	0	0	0	6
	26-30	7	0	2	1	0	0	0	0	0	10
	31-35	6	2	0	0	0	0	0	0	1	9
	36-40	5	5	1	0	0	0	1	0	0	12
	41+	1	0	0	0	0	0	0	0	0	1
	Total	38	10	4	1	1	1	1	1	0	57

Table 7.2 above shows a total of **57** noise induced hearing loss (NIHL) cases reported from the platinum sector during **April-June 2023**.

The analysis is as follows:

- **One** case of **10-15%** PLH with **≤1-5 years** and **≤6-10 years** of service in the mining industry.
- **Five** cases of **10-15%** with **≤11-15 years** of service, and
- **One** cases of **16-20%** with **≤11-15 years** of service.

Table 7.3 Analysis of noise-induced hearing loss (NIHL) from coal mines: April-June 2023

Coal	Years of service	PLH									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
	1 - 5	0	0	0	0	0	0	0	0	0	0
	6 - 10	0	0	0	0	0	0	0	0	0	0
	11-15	0	0	0	0	0	0	0	0	0	0
	16 - 20	0	0	0	0	0	0	0	0	0	0
	21-25	0	1	0	0	0	0	0	0	0	1
	26-30	0	0	0	0	0	0	0	0	0	0
	31-35	1	0	0	0	0	0	0	0	0	1
	36-40	0	0	0	0	0	0	0	0	0	0
	41+	0	0	0	0	0	0	0	0	0	0
	Total	1	1	0	0	0	0	0	0	0	2



- **One** cases of Noise Induced Hearing Loss reported in coal sector, one with **PLH** of **16-20%** at **21-25** years of service.
- **One** case of Noise Induced Hearing Loss reported in coal sector, one with **PLH** of **10-15%** at **31-35**

Table 7.4 Analysis of noise-induced hearing loss (NIHL) from chrome mines: April-June 2023

	Years of service	PLH									Total
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	
Chrome	1 - 5	0	0	0	0	0	0	0	0	0	0
	6 - 10	0	0	0	0	0	0	0	0	0	0
	11-15	0	0	0	0	0	0	0	0	0	0
	16 - 20	1	0	0	0	0	0	0	0	0	1
	21-25	1	0	0	0	0	0	0	0	0	1
	26-30	0	0	0	0	0	0	0	0	0	0
	31-35	0	0	0	0	0	0	0	0	0	0
	36-40	0	0	0	0	0	0	0	0	0	0
	41+	0	0	0	0	0	0	0	0	0	0
	Total	2	0	0	0	0	0	0	0	0	2

Two cases of NIHL were reported in chrome mines as shown on **table 7.4** above. **One** case with **16-20 years** and **21-25 years of service** respectively with the PLH of **10-15%**.

8. ANALYSIS OF DEATHS DUE TO WORK-RELATED DISEASES

No cases of deaths due to work-related diseases were reported by mines for both reporting periods.

9. CONCLUSION

A significant increase is noted on the occupational diseases reported during April-June 2023 when compared to the same reporting period in the previous year which raises a major concern. Pulmonary tuberculosis, Noise Induced hearing loss, Silicosis and Chronic obstructive airway diseases were the major contributors to an increase in the occupational diseases reported.

10. RECOMMENDATIONS

Mines should review the Codes of Practice (**COPs**) to align them with the revised the Airborne Pollutants and Noise guidelines issued by the Chief Inspector of mines. Section 11.5 investigations must be conducted on Occupational diseases to identify the causes and the underlying causes of the serious illness. Policies and procedures in place must be followed and implemented.



OCCUPATIONAL SAFETY



1. NUMBER OF FATALITIES PER FY QUARTER 1 (April 2022 - June 2022)

During the period of April to June 2023, **eleven (11)** fatalities were reported whilst during the same period in 2022 **eleven (11)** mine workers were fatally injured. This translates to no change in the number of fatalities year on year.

2. STATISTICS OF FATALITIES BY REGION

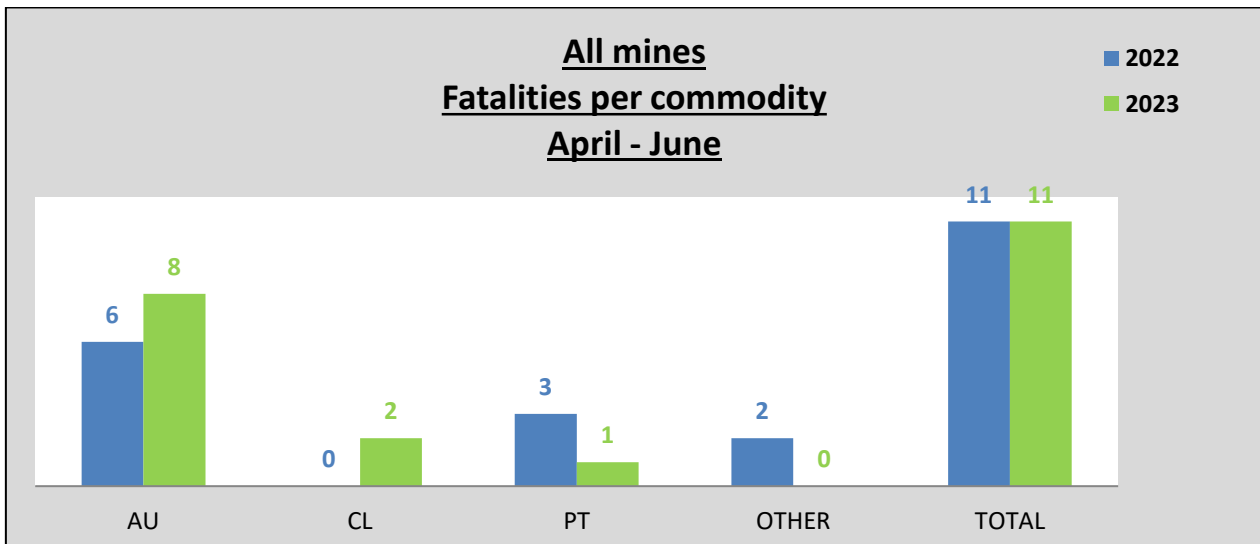
The table below illustrates the progressive performance of each region with regard to fatalities. During the period of April to June 2022, **seven (7)** of the **ten (10)** regions had not reported any fatalities.

FATALITIES PER REGION – APRIL TO JUNE 2023											
	WC	NC	FS	EC	KZN	MP	LP	GP	NW-KLD	NW-RST	TOTAL
FOG								4			4
MACHINERY											0
TRANSPORTATION AND MINING											0
GENERAL						1		4		1	6
CONVEYANCE											0
ELECTRICITY											0
EXPLOSIVES											0
MISCELLANEOUS						1					1
TOTAL	0	0	0	0	0	2	0	8	0	1	11

3. ANALYSIS OF FATALITIES BY COMMODITY

For the purpose of the analysis, commodities are grouped into gold (AU), platinum (PT), coal (CL) and other mines (i.e. chrome and copper).

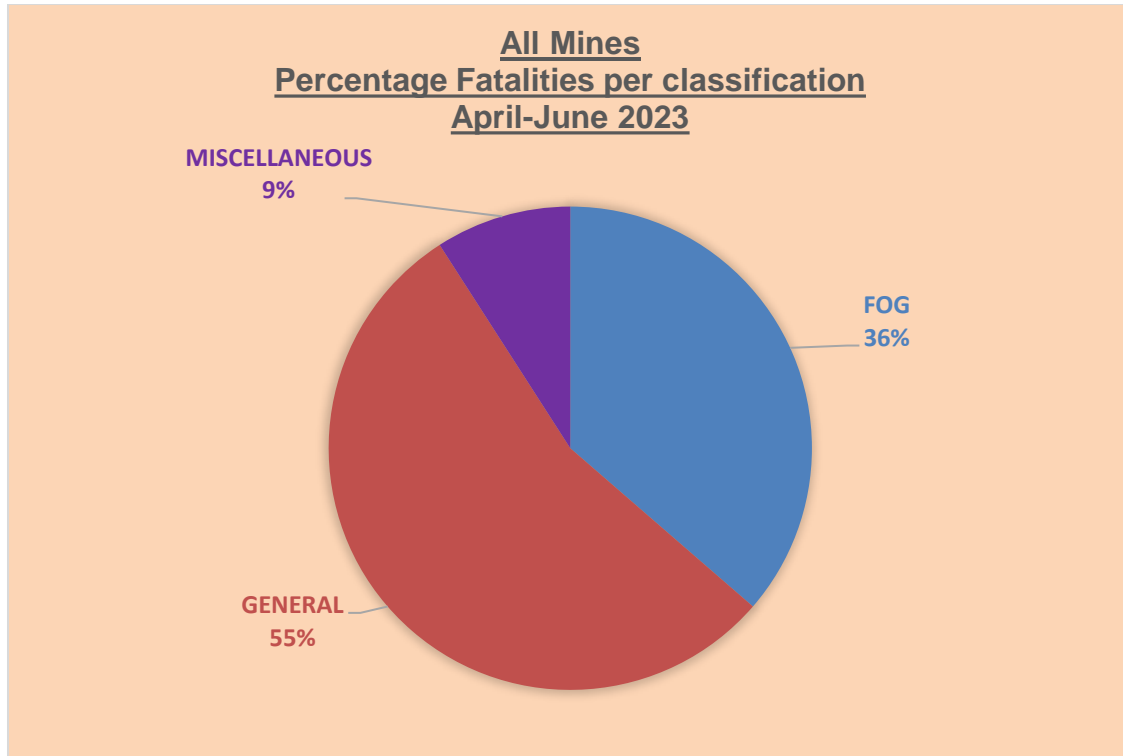
3.1 The comparison of fatalities for the period April to June 2023 and 2022 are reflected on the graph below and shows an increase of 33% and 200% in the gold and coal sectors respectively while the platinum and other mines sectors show decreases of 67% and 200% respectively.





4. ANALYSIS OF FATALITIES BY CLASSIFICATION – ALL MINES

The graph below shows the provisional causes of fatalities per classification for the period under review, April-June 2023:



4.1 General (55%)

There were **six (6)** fatalities reported in this category during this period, **four (4)** were reported in the gold sector sub-classified as struck by in a single incident, **one (1)** was reported in the coal sector sub-classified as gas inhalation and **one (1)** in the platinum sector sub-classified as slip and fall.

4.2 Fall of ground (FOG (36%))

There were **four (4)** fatalities reported in this category during this period, all in the gold sector. **Three (3)** were seismic induced and **one (1)** was gravity induced.

4.3 Miscellaneous (9%)

Miscellaneous classification refers to fatalities where the cause is yet to be determined, following investigations, inquiries or post-mortems. There was **one (1)** fatality reported in this category during this period in the coal sector.



5. CONCLUSION

For the period under review, general fatalities are the highest. Always conducting risk assessments before carrying out any task, getting employees to undergo behavioural safety training, among others, can eliminate these general fatalities.